

### **Claims**

1. A fluid transfer system, comprising:

a cylindrical member having a closed end and an open end, said closed end fitted with a luer for connection to a fluid store or an intravenous needle, a cannula extending from said luer into said member to effect a fluid conduit with said luer, said member having a distal portion of a first diameter that extends from said closed end and a proximal portion of a second diameter that extends from said open end, said second diameter being larger than said first diameter, said first diameter being sized to accept a vacuum tube and said second diameter being sized to accept the neck and a portion of a fluid collection bottle;

an adapter fittable into said member by insertion from said open end, said adapter having a base with a central opening, a cylindrical tube extending from said base in communication with said opening, said tube having a diameter slightly smaller than said first diameter so as to be fittable into said distal portion of said member to provide a passage wherethrough a vacuum tube may be guided into said member to be pierced by said cannula so that a fluid communications path may be effected from said luer to the interior of the vacuum tube, said adapter having a noncontinuous circular wall having a cross-section smaller than said second diameter formed by adjacent sections extending from said base to encircle a part of said cylindrical tube, the height of said wall substantially equaled to the length of said proximal portion.

2. Fluid transfer system of claim 1, further comprising a circumferential groove formed along the inside surface of said proximal portion of said cylindrical member and protuberances each formed externally at a section of said wall of said adapter, wherein when said adapter is inserted to said member, said protuberances of said adapter mate with said groove at said member to prevent said adapter from being inadvertently disengaged from said member.

3. Fluid transfer system of claim 1, wherein said member has a flange extending substantially circumferentially about said open end, said flange acting against said base of said adapter to prevent said adapter from being pushed further into said member when said adapter is inserted into said member.

4. Fluid transfer system of claim 1, wherein a shoulder is formed at said member where said distal portion joins said proximal portion, said shoulder guiding said cylindrical tube of said adapter into said distal portion of said member when said adapter is inserted into said member.

5. A safety holder for transferring fluid from either a syringe or a patient to different dimensioned fluid collection stores, comprising:

a cylindrical member having a closed end and an open end, said closed end fitted with a luer for connection to the syringe or an intravenous needle for insertion to the patient, a cannula extending from said luer into said member to effect a fluid conduit with said luer, said member having a distal portion and a proximal portion, said distal portion extending from said closed end and having a first diameter sized to accept a first fluid collection store, said proximal portion extending from said open end and having a second diameter sized to accept a second fluid collection store;

an adapter matable to said member by insertion from said open end, said adapter having a base with a central opening, a cylindrical tube extending from said base in communication with said opening, said tube having a diameter slightly smaller than said first diameter so as to be at least partially fittable into said distal portion of said member to provide a passage wherethrough said first fluid collection store may be extended into said member to be pierced by said cannula, said adapter having a noncontinuous circular wall having a cross section smaller than said second diameter formed by adjacent sections extending from said base to encircle

a part of said cylindrical tube, the height of said wall substantially equaled to the length of said proximal portion;

wherein said second fluid collection store is fittable to said proximal portion of said member when said adapter is not mated to said member.

6. Safety holder of claim 5, wherein said second diameter is larger than said first diameter.

7. Safety holder of claim 5, further comprising a circumferential groove formed along the inside surface of said proximal portion of said cylindrical member proximate to the intersection of said distal and proximal portions, protuberances each formed externally at a section of said wall of said adapter, said protuberances mating with said groove to prevent said adapter from being inadvertently disengaged from said member when said adapter is inserted to said member.

8. Safety holder of claim 5, wherein said member has a flange extending substantially circumferentially about said open end, said flange acting against said base of said adapter to prevent said adapter from being pushed further into said member when said adapter is inserted into said member.

9. Safety holder of claim 5, wherein a shoulder is formed at said member for joining said distal portion to said proximal portion, said shoulder guiding said cylindrical tube of said adapter into said distal portion of said member when said adapter is inserted into said member.

10. A method of transferring fluid from either a syringe or a patient to different dimensioned fluid collection stores, comprising the steps of:

a) providing a cylindrical member having a closed end, an open end, a distal portion and a proximal portion, said distal portion extending from said closed end and having a first diameter sized to accept a first fluid collection store, said proximal portion extending from said open end and having a second diameter sized to accept a second fluid collection store, said second diameter being larger than said first diameter;

b) fitting a luer to said closed end for connection to the syringe or an intravenous needle for insertion to the patient;

c) connecting a cannula from said luer into said member to effect a fluid conduit with said luer;

d) providing an adapter having a base with a central opening, a cylindrical tube extending from said base in communication with said opening, said tube having a diameter slightly smaller than said first diameter so as to be at least partially fittable into said distal portion of said member, a noncontinuous circular wall formed by adjacent sections extending from said base to encircle a part of said cylindrical tube, the height of said wall substantially equaled to the length of said proximal portion and the cross section of said wall being smaller than said second diameter; and

e) inserting said adapter into said member to establish a passage wherethrough said first fluid collection store may be guided into said member to be pierced by said cannula.

11. Method of claim 10, further comprising the steps of:

removing said adapter from said member; and

fitting said second fluid collection store to said proximal portion of said member so that the neck of said second fluid collection store is fitted into said distal portion while a part of its main body is fitted within said proximal portion to establish a fluid path ~~from~~ said luer to the interior of said second fluid collection store.

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12. Method of claim 10, further comprising the steps of:

forming a circumferential groove along the inside surface of said proximal portion of said cylindrical member proximate to the intersection of said distal and proximal portions;

forming a plurality of protuberances each externally at a section of said wall of said adapter;

wherein said protuberances mate with said groove to prevent said adapter from being inadvertently disengaged from said member when said adapter is inserted to said member.

13. Method of claim 5, wherein said step a comprises the step of:

extending a flange substantially circumferentially about said open end of said member, said flange acting against said base of said adapter to prevent said adapter from being pushed further into said member when said adapter is inserted into said member.

14. Method of claim 5, wherein said step d comprises the step of:

forming a shoulder at said member for joining said distal portion to said proximal portion, said shoulder guiding said cylindrical tube of said adapter into said distal portion of said member when said adapter is inserted into said member.